

REMARKS

This paper responds to the Office Action dated March 26, 2002.

5 Attached are Form PTO/SB/22 and Form PTO-2038.

The application was filed with claims 1-46. On February 28, 2002 the Examiner communicated a restriction requirement by telephone to the applicant's attorney, with three groups, namely claims 1-20, claims 21-34, and 35-46. On March 1, 2002, applicant's attorney responded by
10 telephone and traversed and, as required by the Patent Office rules, made an election, namely an election of the group of claims 1-20. Applicant affirms that election.

Now comes the Office Action dated March 26, 2002, in which the Examiner has examined claims 1-20. The Examiner has declined to examine claims 21-46.

15

The Examiner has rejected claims 1-20 on a variety of grounds.

The Restriction Requirement. In this Office Action the Examiner has reiterated the restriction requirement, which the applicant traversed in the previous telephone communications and now
20 traverses. It is respectfully suggested that the second and third groups identified by the Examiner would not require substantial searching in addition to that required for the first group, and that for this reason it is requested that the Examiner reconsider the restriction requirement.

Abstract. The Examiner requires a new Abstract on a separate sheet. A new Abstract is
25 attached.

Claims on a separate sheet. The Examiner states that the claims "do not commence on a separate sheet". It is respectfully suggested that this statement may be in error. According to applicant's file, the claims commence on a separate sheet, namely page 22.

30

Rejection as to form. The Examiner rejected all examined claims as to form. Claim 1, the sole

examined independent claim, has been amended. It is requested that the Examiner reconsider the rejections as to form in view of the newly amended claim 1.

Rejection over art. The Examiner has rejected all examined claims over two references: US Pat. No. 5,173,142 to Billiu ("Billiu"), US Pat. No. 5,362,431 to Guerrini et al. ("Guerrini"). In addition, it is noted that International Patent Application Pub. No. WO 90/06226 to Behar ("Behar") was cited in the International Preliminary Examination. Comments will thus be offered with respect to all three of these references.

This new amended claim 1, based on the originally filed claim 1, has been rearranged and further features and expressions have been added. New amended claim 1 has a number of limitations and the correspondence between these limitations and the cited references will now be discussed.

element	limitation	found in Billiu and Guerrini	found in Behar
	A structural component of fiber-reinforced thermoplastic material comprising:		
a	a shape-forming, long-fiber-reinforced thermoplastic matrix and		
b	separate, single load-bearing plastified and consolidated continuous fiber strands with a thermoplastic matrix,	no	no
c	in a defined position within the structural component, the positions of the shape-forming long-fiber-reinforced thermoplastic matrix and the separate, single load-bearing plastified and consolidated continuous fiber strands with a thermoplastic matrix defining interfaces therebetween;	no	no
d	said continuous fiber strands being interconnected and having at least one load-transmitting flat internal connecting area between two continuous fiber strands	no	no
e	and where the single continuous fiber strands are forming a load-bearing supporting structure which is integrated in	no	
f	and thermoplastically bonded to the long-fiber-reinforced thermoplastic matrix at the interfaces therebetween.	no	

So far as applicant's attorney is able to discern, the two US references Billiu and Guerrini disclose at most limitation a, but do not disclose limitations b, c or d, nor do they disclose limitations e or f.

5

So far as applicant's attorney is able to discern, the PCT reference Behar does not disclose limitations b, c or d.

10

In neither Billiu nor Guerrini is applicant's attorney able to discern any indication at all of any sort of continuous fiber strands in a structural component with a long-fiber reinforced thermoplastic matrix.

15

In Guerrini the Examiner cites column 1, lines 1-31. It appears that this reference discloses only the use of continuous-fiber composites with a thermoplastic matrix. But there is no indication of the continuous-fiber strands (see limitation b above) in a structural component.

20

When one considers that the claimed invention is limited to a component comprising continuous fibers, it appears that Guerrini actively teaches away from such a limitation. Consider for example Guerrini claim 1, which there is a step of "cutting said filament into granules." It appears that after this step is performed, Guerrini delivers only long-fiber thermoplastic granules and not anything with continuous fiber strands.

25

Information Disclosure Statement. The Examiner states that "the information disclosure statement filed November 20, 2000 ... does not include a concise statement of ... relevance ... of each patent."

30

Applicant hereby provides a concise statement of relevance for the cited reference Behar, and it is requested that Behar be made of record in this application.

Behar discloses a method for fabricating a stamped object made of thermoplastic composite material, which is heated to the stamping temperature and placed in a cold mold of a stamping

press. A filamentary composite material with long or continuous fibers is used, preheated to the stamping temperature and then continuously deposited into the cold mold. When the mold is filled, the filamentary composite is cut and the deposit is pressed to produce the stamped object.

5 Behar Fig. 4 shows a installation for fabricating an object according to this method.

Behar Fig. 9 shows a example of such an object, where the thin filamentary composite is deposited in a multitude of windings to fill the mold and after stamping to result in a compact shell or plate forming the object.

10

Behar does not, however, disclose any of the following claim limitations:

- separate, single, load-bearing plastified and consolidated continuous fiber strands with a thermoplastic matrix (Since the thin filamentary composite or flexible threads in Behar cannot
15 be load-bearing)

- continuous fiber strands in a defined position within the structural component (Since thin threads or flexible filaments cannot have a defined position; they are deposited in many windings and pressed to form a compact shell)

20

- strong continuous fiber strands having at least one load-transmitting flat internal connecting area between two continuous fiber strands (This is also not disclosed, since there are no such strands, and the crossover of two thin filaments in Behar Fig. 9 also cannot form load-transmitting flat internal connections areas).

25

Behar discloses a filamentary composite material, i.e. a thin thread of continuous fibers in a thermoplastic matrix which is continuously deposited in a mold so that a layer or a shell is formed by a plurality of windings of this thin thread composite.

30

Thus a sheet is formed by pressing (stamping) this multitude of thread windings (which cannot have defined positions) as a reinforcing structure.

In the present application, on the contrary, there is no multitude of thin thread windings deposited and no sheet structure is formed.

For all the reasons described above, therefore, it is suggested that the cited references do not
5 render amended claim 1 unpatentable. Reconsideration is requested.

Respectfully submitted,



10 Carl Oppedahl, PTO Reg. No. 32,746
Oppedahl & Larson LLP
P O Box 5068
Dillon, CO 80435-5068
15 telephone 970-468-6600
email oppedahl@patents.com

Separate sheet in accordance with Rule 121

1. [Structural component (1) made out of fibre-reinforced thermoplastic plastic material,
5 characterized by a shaping, long-fibre-reinforced (LF) thermoplastic matrix (2) and an integrated
load-bearing supporting structure (4) consisting of consolidated continuous fibre strands (CF) (3)
with a thermoplastic matrix, whereby the long-fibre matrix and the continuous fibre matrix are
compatible to such an extent, that they at their mutual interfaces (6) are fused together, resp.,
thermoplastically bonded and whereby the continuous fibre strands (3) of the supporting
10 structure (4) have at least one load-transmitting internal connecting area (7) of two continuous
fibre strands]

A structural component of fiber-reinforced thermoplastic material comprising:

15 a shape-forming long-fiber-reinforced thermoplastic matrix and separate, single load-bearing
plastified and consolidated continuous fiber strands with a thermoplastic matrix in a defined
position within the structural component, the positions of the shape-forming long-fiber-
reinforced thermoplastic matrix and the separate, single load-bearing plastified and consolidated
continuous fiber strands with a thermoplastic matrix defining interfaces therebetween;

20 said continuous fiber strands being interconnected and having at least one load-transmitting flat
internal connecting area between two continuous fiber strands;

25 wherein the single continuous fiber strands form a load-bearing supporting structure which is
integrated in and thermoplastically bonded to the long-fiber-reinforced thermoplastic matrix at
the interfaces therebetween.